

# History of Canadian science and technology not well organized

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It took 2 days for a cross-Canada group of enthusiasts for the history of science and technology to discover recently that they were following the advice of Alice's King: "Begin at the beginning."

None the less, as plenary chairman C.E.S. Franks summed up: "I think we're miles ahead of where we were 2 days ago." The contacts made at this Kingston conference, hosted by Queen's, between museologists, archivists, academics and a few practising scientists may stimulate a movement to put study of the history of science and technology on a formal basis.

But for now there are no courses and no textbooks. Indeed, as one participant said, without a textbook it is difficult to plan a course, and without courses no publisher will be interested in putting out a textbook.

The history of medicine is part of this, yet apart. Mainly because there are courses and chairs in the discipline; there is a society to promote the discipline; work is being done and the body of knowledge is being organized and extended. In fact, of the disciplines that form part of science and technology, medicine was the only one to hold its own workshop. The other sciences were submerged in discussions on archives, courses, institutions, teaching materials and museology.

## Plenty to rediscover

But medicine has plenty to rediscover about itself, as was evident from some of the discussion. For instance geographer A.J. Ray of York University told the conference the Hudson's Bay archives contain daily journals for each of the 200-plus trading posts over 300 years. This huge mass of material, which occupies three large rooms, contains notes on health conditions, nutrition, climate, population trends and innumerable features of Canada's early development. Many of the trading post managers were physicians. Ray said the course of epidemics of influenza and smallpox can be traced through the journals and other records. One study of the annual freeze-

up and break-up times showed there has been little change in the length and severity of Canada's winters over 300 years. But a great deal remains to be done with these archives, Ray said. There has, for instance, not yet been any study of the efficacy of the doctor-traders as physicians.

## Concern over loss

The participants expressed concern over the possible loss of archival material in science and technology, and they found a good issue in the possible loss to Canada of the bulk of the papers of Robert Bell. Bell, a geologist-physician, served more than 50 years with the Canadian Geological Survey, being acting director 5 years and chief geologist thereafter. His notes include observations on health and nutrition, Indians and Inuit, flora and fauna and many other facets of life apart from geology. (Bell was one of the physicians in the series by W.E. Swinton in *CMAJ*, physician contributions to nonmedical science. See *CMAJ* 115: 948.)

The story, as it came out at the conference, is that the Bell family offered the whole collection of papers to the Public Archives of Canada. The archives received the documents and after a while returned most of them — 25 boxes — as "of no historical interest". Included in the returned material was a letter to Bell from Darwin.

Subsequently the Bell family arranged to have the papers sold by a Montreal auctioneer, and one lot, amounting to perhaps 10% to 12% of the whole, was auctioned, the sale bringing in \$22 000. The Darwin letter fetched \$800.

Norman Ball, Public Archives of Canada, said he had seen the Bell papers; they are still packed in the boxes in which the archives returned them, and buyers are being told the material is all "good stuff" and it used to be in the public archives. Mr. Ball went to considerable length (including the reading of intradepartmental correspondence) to prove that if there are no answers currently

available on this issue, it's not his fault.

The conference passed a resolution addressed to the secretary of state asking him to invoke the Cultural Properties Import and Export Act. Under this, material judged to be of cultural significance to Canada can be barred from export for up to 2 years while a Canadian buyer is sought. The availability of archival material naturally concerned most of those present, and one of the problems pinpointed was that most archivists, being by training historians, simply are not competent to assess the value of scientific documents. Also archivists tend to be pragmatic; they do not have all the storage facilities they would like and they will keep the material they judge most likely to be demanded. Science and technology has not been historically conscious, observed Jacques Bernier of Laval. None the less, there are as-yet-untapped sources for the historian of science and technology. The public archives may not be rich with such material but there are many other sources, some of which have material equal to that in the public archives. Many companies have excellent records, although to smaller enterprises maintaining them is a burden.

## Work to be done

If the archivists perceive no demand for historical material on science and technology, does this mean there is no work being done in the field? Part of the answer came from Yves Mougeot, whose job is to administer historical grants at the Social Sciences and Humanities Research Council (formerly the Canada Council). He estimated that in the decade 1969-78 there were 58 applications for grants to support historical projects in science and technology. This 5.8 a year compares with 120 to 130 applications annually for all forms of historical projects. The 58 applications were made by 32 people, and of the 58, 13 (by 9 people) were on specifically Canadian topics. Applications are almost al-

ways for sums of less than \$10 000, and the total spending on history of science and technology projects in the 10 years was \$353 000. Mr. Mougeot said 71% of all applications to the council are successful. In history 81% are successful, and the success rate for the 58 science and technology applications was 84%.

Mr. Mougeot pointed out that this is not the whole story; universities are awarding funds for such work and there may be other sources, he said.

If work is being done in this field, are there avenues for its publication? Donald Phillipson, a science writer and occasional contributor to *CMAJ* apparently thought not, as he introduced a motion calling for a publication committee to be set up to launch a scholarly journal devoted to the history of science and technology. The conference rejected the proposal as too premature (see also box, this page).

Books on historical aspects of science and technology continue to be published, pointed out Ian Montagnes, general editor of the University of Toronto Press. Many of these books are being sponsored by government departments and associations; a few are supported by university publishers, although the U of T press is required to break even on operations as a whole. He said publishing has to be regarded as a business; even when a book is subsidized the accounting has to be done and a budget has to be followed. Many scholarly books sell only 500 copies, he said, and the break-even point for publishing a book is about 3000. In the last 6 years the economics of publishing, especially university publishing, have changed drastically. There has been a severe increase in the cost of printing and paper (about 15% a year); funds for uncommercial publications have become uncertain, yet there is a greater demand than ever for the publication of scholarly books.

### Solution

What to do? Mr. Montagnes had a three-part answer:

- Buy more books. If every university professor bought one more hard-cover book a month there would be a major change in the eco-

## Conference cool to idea of Canadian *Smithsonian*

The conference on the history of science and technology decided that the time was not suitable for introduction of a scholarly Canadian journal. It did not, however, consider the possibility of a popular journal, for which the prospects are quite different. In the US, the Smithsonian museum in 1970 launched a popular magazine of the history of science and technology, entitled, appropriately, *The Smithsonian*. After 6 years of operation it was reported to have achieved a subscription list of 1 000 000 and advertising sales

of \$5.6 million. Scaling everything down by the usual 90%, it is evident that a similar journal in Canada has a potential 100 000 subscriptions (at say a cover price of \$1.25) and advertising sales of \$500 000. This would support publication each month of a 50-page journal with 8 to 10 high-quality articles and illustrations. *The Smithsonian* makes a substantial contribution to the budget of its parent museum. A Canadian version also would have the potential to turn a modest profit.

nomics of publishing scholarly books. Mr. Montagnes said that in 1952 the average list price for a hard-cover book was \$4.86; in 1977 it was \$16.34. In the same 25 years, he said, university professors' salaries have increased by a greater proportion.

- Write better books. A publisher has to hire people at \$12 an hour to correct grammar and spelling and straighten out inconsistencies, and sometimes a book can take up to 100 hours of such work. More care in the writing would improve the economics of publishing. "Those editorial costs are soon going to have to be passed on to the author," Montagnes predicted.

- Accept alternative forms of publishing. For instance, a book could be catalogued and held at the publishing house and copies by microfiche or Xerographic means distributed on order.

### Part of culture

Hugh Wynne-Edwards, an assistant secretary at the Ministry of Science and Technology, made a few good points in a speech that otherwise was mostly of delightful and elegant irrelevance. Science, he said, is a part of our culture, which is the totality of what we do. Science museums attract three to five times the attendance of art galleries and other museums, and the Canadian Broadcasting Corporation's science program attracts as large an audience as

the national news. Yet the local newspaper devotes sections to sports, news, women's affairs, business — but not to science.

### Past, present, future

The conference was set up to review what work is being done in this field, what opportunities there are, what is being done to teach the history of Canadian science and technology to students and the public, the availability of source materials and how improvements could be made. Starting from the beginning, this was possibly an ambitious set of objectives, but those present at least touched most of the bases. They listened amiably to Dr. Wynne-Edwards, whose polished phrases took him into the present-day ecologic dilemma, although when a workshop report began discussion of the current problems facing Canadian inventors, the demur was that this was politics — with the implication that historians and gentlemen do not descend to such vulgarisms.

The history of medicine came through as the most advanced part of the discipline. With this example before them, with perhaps a little more cooperation from the National Museum of Science and Technology (which failed to show up at all) and with the catalytic effect inevitable from mutual intellectual stimulation, the prognosis for the sickly body of the history of Canadian science and technology is for improving health and vigour. ■